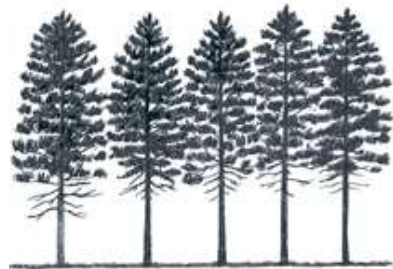




Appendix E - Silvicultural and Fire Prescription Matrices  
Spruce Beetle Epidemic and Aspen Decline Management Response  
5/12/2014 Draft

| Spruce-fir Structural Stand Conditions  | Resiliency Rx   |  | Recovery and Resiliency Rx  |  | Recovery Rx   |   |
|---|---|--|---|--|---|---|
|   | <40% overstory mortality <sup>1</sup>   |  | >40% <90% overstory mortality <sup>1</sup><br>(exceeds windthrow threshold <sup>3</sup> )   |  | >90% overstory mortality <sup>1</sup><br>(exceeds windthrow threshold <sup>3</sup> )  |   |
|   | Stand multi-storied <sup>2</sup> and averages ≥35% DHC <sup>4</sup> and advanced regeneration are above mean snow depth.  | Stand is multi-storied and <35% DHC <sup>4</sup> .   | Stand multi-storied <sup>2</sup> and averages ≥35% DHC <sup>4</sup> and advanced regeneration are above mean snow depth.  | Stand is multi-storied <sup>2</sup> and <35% DHC <sup>4</sup> .  | Stand multi-storied <sup>2</sup> and averages ≥35% DHC <sup>4</sup> and advanced regeneration are above mean snow depth.  | Stand is multi-storied <sup>2</sup> and <35% DHC <sup>4</sup> . |
| Single-storied<br>                                      | <b>Silvicultural Rx:</b> Initiate UAM <sup>4</sup> using ITS <sup>4</sup> or group selection (<3 tree length – 0.25 to 2 acre openings). Removal centered on pockets of dead and dying. Harvest approximately 15 to 25% of the stand area with small openings tree lengths). Emphasis for group placement is in pockets of dead or dying trees. Individual tree selection will be conducted as needed to remove beetle affected trees in the matrix (areas between group selection openings). If needed, mechanical site preparation will be used to promote seed germination and seedling survival. Maintain “wind firmness” by removing no more than 40% of the present stocking within the matrix. All trees with active beetle life forms in the tree will be marked for removal. Live trees, older dead trees and recently killed trees will be retained to maintain 60% of the original stocking.<br><br>These stands generally lack understory vegetation (trees), but it may be present in isolated pockets within stands<br><br>Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger where it occurs.<br><br><b>Lynx Habitat:</b> suitable.<br><br><b>SRLA<sup>5</sup>:</b> Stand is not multi-storied and therefore not subject to cap restrictions. |  | <b>Silvicultural Rx:</b> Remove all dead-dying Spruce-fir and plant where adequate seed sources are lacking – Combination of Group Select where mortality is patchy to larger CC <sup>4</sup> where mortality is extensive. If needed, mechanical site preparation will be used to promote seed germination and seedling survival. If portions of the stand are less than 40%, create small openings (0.25 to 2 acres or <3 tree lengths) otherwise removal of the entire stand may be needed. In areas where the entire stand will not be removed, maintain “wind firmness” by removing no more than 40% of the present stocking within the matrix.<br><br>These stands generally lack understory vegetation (trees), but it may be present in isolated pockets within stands<br><br>Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger where it occurs.<br><br><b>Lynx Habitat:</b> suitable.<br><br><b>SRLA<sup>5</sup>:</b> Stand is not multi-storied and therefore not subject to cap restrictions.  |  | <b>Silvicultural Rx:</b> Remove all dead-dying spruce-fir and plant where adequate natural seed sources are lacking and when funds are available to do so.Larger CC <sup>4</sup> will be used where mortality is extensive. If needed, mechanical site preparation will be used to promote seed germination and seedling survival. If portions of the stand is less than 40%, create small openings (<0.25 to 2 acres or <3 tree lengths) otherwise removal of the entire stand may be needed. In areas where the entire stand will not be removed, maintain “wind firmness” by removing no more than 40% of the present stocking within the matrix.<br><br>These stands generally lack understory vegetation (trees), but it may be present in isolated pockets within stands<br><br>Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger.<br><br><b>Lynx Habitat:</b> If 90% or greater of the overstory is dead or projected to be dead in two-years due to high levels of beetle infestationmay be considered unsuitable lynx habitat if it lacks an live green undestory (Southern Rockies Lynx Amendment Implementation Guide Page 16). To goal it to protect high quality >35% advanced regeneration to the maximum extent practicable.<br><br><b>SRLA<sup>5</sup>:</b> Stand is not multi-storied and therefore not subject to cap restrictions. |   |
| Two-storied (considered multi-storied under SRLA)<br> | <b>Silvicultural Rx:</b> Initiate UAM <sup>4</sup> using ITS <sup>4</sup> or group selection 0.25 to 2 acre openings (<3 tree lengths). Removal of Dead and dying. Removal centered on pockets of dead and dying. Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger.<br><br><b>Lynx Habitat:</b> suitable – high quality.<br><br><b>SRLA:</b> <sup>5</sup> Track under Veg S1, S2, and S6 <sup>5</sup> . Uneven-aged management prescription must be used and tracked under VEG S1 and S2. Incidental damage to advance regeneration is measured at 20% of the treated stand. Roads within treated units- included in incidental damage estimates from logging. Roads outside treatment units – 100% of the footprint of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition.  | <b>Silvicultural Rx:</b> Initiate UAM <sup>4</sup> using ITS <sup>4</sup> or group selection 0.25 to 2 acre openings (< 3 tree lengths). Removal of Dead and dying. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger. .<br><br><b>Lynx Habitat:</b> suitable. incidental damage must be addressed in the Biological Assessment but is not tracked under VEG S6. <sup>5</sup><br><br><b>SRLA:</b> Track under Veg S1 and S2. Uneven-aged management prescription must be used and tracked under VEG S1 and S2. Incidental damage to advance regeneration is measured at 20% of the treated stand. Roads within treated units- included in incidental damage estimates from logging. Roads outside treatment units – 100% of the footprint of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Acres tracked under VEG S1, S2 | <b>Silvicultural Rx:</b> Overstory removal (salvage) of dead and dying. Where mortality is lower, use un-even-aged management prescriptions- patch cuts 0.25 to 2 acres openings (< 3 tree lengths) or individual tree selection centered on pockets of dead and dying. Removal may be more extensive where mortality is high. Live trees that pose a blow down risk may also be removed. Maintain “wind firmness” by not removing more than 40% of the present stocking within a residual stand. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger.<br><br><b>Lynx Habitat:</b> suitable – high quality.<br><br><b>SRLA:</b> If uneven-aged management prescription is used – track under VEG S1 and S2 <sup>5</sup> . Incidental damage to advanced regeneration is measured at 35% of treated stand. Salvage or uneven-aged management prescription – track under VEG S1, S2 and S6.<br><br>incidental damage to advanced regeneration is measured at 35% of treated stand. Roads within treatment units are included in incidental damage from logging. Roads outside treatment unit – 100% of the foot-print of the road will be converted to | <b>Silvicultural Rx:</b> Overstory removal (salvage) of dead and dying. Where mortality is lower, use un-even-aged management prescriptions- patch cuts 0.25 to 2 acres openings (< 3 tree lengths) or individual tree selection centered on pockets of dead and dying. Removal may be more extensive where mortality is high. Live trees that pose a blow down risk may also be removed. Maintain “wind firmness” by not removing more than 40% of the present stocking within a residual stand. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger.<br><br><b>Lynx Habitat:</b> suitable - incidental damage must be addressed in the Biological Assessment but is not tracked under VEG S6.<br><br><b>SRLA:</b> Uneven-aged management prescription – track under VEG S1 and S2 <sup>5</sup> . Incidental damage to advanced regeneration is measured at 35% of treated stand. Salvage or even-aged management prescription – track under VEG S1and S2. When an uneven-aged Rx is used, incidental damage to advanced regeneration is measured at 35% of treated stand. Roads within treatment units are included in incidental damage from logging. Roads outside treatment unit – 100% of the foot-print of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Acres tracked | <b>Silvicultural Rx:</b> Stand no longer considered multi-story due to dead overstory. Overstory removal (salvage) of dead and dying. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (>35% DHC) in blocks of 0.3 acres or larger.<br><br><b>Lynx Habitat:</b> Depends upon understory characteristics – if it provides suitable habitat for hares then it is considered suitable.<br><br><b>SRLA:</b> Incidental damage to advanced regeneration is tracked under VEG S1 and S2. VEG S6 <sup>5</sup> does not apply when >90% of overstory is dead or dying. Where a live understory over average snow depth is present, incidental damage to habitat is estimated to be 50% of treated acres and 100% of new roads if they do not transverse a treatment unit.   |   |

|   |  |  |   |  |  |   |
|---|--|--|---|--|--|---|
|   |  |  | stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Acres tracked under VEG S1, S2 and S6. <sup>5</sup>   | under VEG S1 and S2 <sup>5</sup>   |  |   |
| <p>Multiple canopy layers – three or more.</p>  | <p><b>Silvicultural Rx:</b> Initiate UAM<sup>4</sup> using ITS or group selection patch cuts 0.25 to 2 acre openings (&lt;3 tree lengths). . Removal centered on pockets of dead and dying. Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> Suitable – high quality</p> <p><b>SRLA:</b> Track under Veg S1, S2 and S6<sup>5</sup>. Uneven-aged management prescription must be used and tracked under VEG S1 and S2. Incidental damage to advance regeneration is measured at 20% of the treated stand. Roads within treated units- included in incidental damage estimates from logging. Roads outside treatment units – 100% of the footprint of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition.</p> | <p><b>Silvicultural Rx:</b> Initiate UAM using ITS<sup>4</sup> or group selection patch cuts 0.25 to 2 acre openings (&lt; 3 tree lengths). Removal centered on pockets of dead and dying . Minimize or avoid to the extent practicable impacts to advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> Suitable– incidental damage must be addressed in the Biological Assessment but is not tracked under VEG S6<sup>5</sup>.</p> <p><b>SRLA:</b> Track under Veg S1 and S2. Uneven-aged management prescription must be used and tracked under VEG S1 and S2. Incidental damage to advance regeneration is measured at 20% of the treated stand. Roads within treated units- included in incidental damage estimates from logging. Roads outside treatment units – 100% of the footprint of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Road acres tracked under VEG S1, S2 and</p> | <p><b>Silvicultural Rx:</b> If two canopies remain alive the stand is still considered multi-storied. Overstory removal (salvage) of dead and dying. Where mortality is lower, use un-even-aged management prescriptions – patch 0.25 to 2 acre openings (&lt;3 tree lengths) or individual tree selection centered on pockets of dead and dying. Removal may be more extensive where mortality is high. Live trees that pose a blow down risk may also be removed. Maintain “wind firmness” by not removing more than 40% of the present stocking within a residual stand. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> Suitable – high quality.</p> <p><b>SRLA:</b> Uneven-aged management prescription – track under VEG S1 and S2<sup>5</sup>. Incidental damage to advanced regeneration is measured at 20% of treated stand. Salvage or even-aged management prescription – track under VEG S1, S2 and S6. Incidental damage to advanced regeneration is measured at 30% of treated stand. Roads within treatment units are included in incidental damage from logging. Roads outside treatment unit – 100% of the foot-print of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Road acres tracked under VEG S1, S2.</p> | <p><b>Silvicultural Rx:</b> If two canopy remains alive the stand is still considered multi-storied. Overstory removal (salvage) of dead and dying. Where mortality is lower, use un-even-aged management prescriptions- patch cuts 0.25 to 2 acre openings (&lt;3 tree lengths) or individual tree selection centered on pockets of dead and dying. Removal may be more extensive where mortality is high. Live trees that pose a blow down risk may also be removed. Maintain “wind firmness” by not removing more than 40% of the present stocking within a residual stand. Minimize or avoid t the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> Suitable - incidental damage must be addressed in the Biological Assessment but is not tracked under VEG S6<sup>5</sup>.</p> <p><b>SRLA:</b> Uneven-aged management prescription – track under VEG S1 and S2. Incidental damage to advanced regeneration is measured at 20% of treated stand. Salvage or even-aged management prescription – track under VEG S1and S2<sup>5</sup>. When even-aged Rx is used, incidental damage to advanced regeneration is measured at 30% of treated stand. Roads within treatment units are included in incidental damage from logging. Roads outside treatment unit – 100% of the foot-print of the road will be converted to stand initiation structural stage (SISS) – lynx habitat in an unsuitable condition. Acres tracked under VEG S1 and S2<sup>5</sup></p> | <p><b>Silvicultural Rx:</b> If two canopy remains alive the stand is still considered multi-storied. Stand no longer considered multi-story due to dead overstory. Overstory removal (salvage) of dead and dying. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> depends upon understory characteristics – if it provides suitable habitat for hares then it is considered suitable.</p> <p><b>SRLA:</b> Incidental damage to advanced regeneration is tracked under VEG S1 and S2. VEG S6<sup>5</sup> does not apply when &gt;90% of overstory is dead or dying.</p> <p>Where a live understory over average snow depth is present, incidental damage to habitat is estimated to be 50% of treated acres and 100% of new roads if they do not transverse a treatment unit.</p> <p><b>Note:</b> If the stand has at two or more living layers the Veg S6 standard still applies. This will be determined at the project-level.</p> | <p><b>Silvicultural Rx:</b> If two canopy remains alive the stand is still considered multi-storied. Stand no longer considered multi-story due to dead overstory. Overstory removal (salvage) of dead and dying. Minimize or avoid to the maximum extent practicable impacts to live advanced regeneration during layout and operations. Focus on protecting high quality advanced regeneration (&gt;35% DHC) in blocks of 0.3 acres or larger.</p> <p><b>Lynx Habitat:</b> depends upon understory characteristics – if it provides suitable habitat for hares then it is considered suitable.</p> <p><b>SRLA:</b> Incidental damage to advanced regeneration is tracked under VEG S1 and S2<sup>5</sup>. VEG S6<sup>5</sup> does not apply when &gt;90% of overstory is dead or dying. Where a live understory over average snow depth is present, incidental damage to habitat is estimated to be 50% of treated acres and 100% of new roads if they do not transverse a treatment unit.</p> <p><b>Note:</b> If the stand has at two or more living layers the Veg S6 standard still applies. This will be determined at the project-level.</p> |

<sup>1</sup> Percent overstory mortality – amount of over-story trees (all species) that are dead or dying. Trees that are infected by beetles (bark colored boring dust in bark crevices and around base of standing trees) and are expected to die within 2 years will be considered dead.

<sup>2</sup> Multi-storied spruce-fir – the SRLA amendment defines as at least two layers of live vegetation layers combined with an overstory that provides at least 40% live canopy (mature overstory) closure.

<sup>3</sup>Removal of approximately ≥40% live stand overstory increases likelihood for windthrow in remaining stand overstory. Response would be to remove remaining overstory and reduce detrimental soil disturbance due to windthrow/uprooting trees.

<sup>4</sup>Definitions: DHC = dense horizontal cover, D&D = dead & dying, ITS = individual tree selection, UAM = uneven-aged management, CC = clear-cut.





<sup>5</sup>SRLA = Southern Rockies Lynx Amendment, VEG S1 = standard that applies to vegetation management treatments that regenerate forested lands (Attachment 1-2 of the SRLA Record of Decision), VEG S2 = standard that applies to timber management projects that regenerate forests except for fuel treatment projects in WUI (Attachment 1-3 SRLA Record of Decision) , VEG S6 = standard that applies to all vegetation management projects within multi-story mature to late successional conifer forests (Attachment 1-4 of the SRLA Record of Decision).


**Uneven-aged Vegetation Management**

Uneven-aged management is recognized as a proactive approach to mimic natural gap dynamics that maintain or encourage multi-story attributes while accomplishing other resource management objectives. Gaps are created naturally in the canopy of stands from small bug infestations, diseases, blowdown pockets of trees, and other natural influences.

The general principle of uneven-aged vegetation management, as identified in Exception 4 in VEG S6, is the small group selections that consist of small forest openings (approximately 1-2 acres in size) in which the openings created by group selection will not exceed 20 percent of a stand in a single entry, but individual tree selection can occur throughout an entire stand or between the groups. Therefore, uneven-aged treatments will approximate natural succession and disturbance processes while maintaining and providing habitat conditions that support lynx and snowshoe hare through time in both the stand initiation structural stage and in mature, multi-story conifer vegetation (VEG O1 and O2). Additionally, uneven-aged treatments will be focused in areas that have the potential to improve winter snowshoe hare habitat but presently have poorly-developed understories that lack dense horizontal cover (VEG O4).



| Aspen Structural Stand Conditions   | Suckering Potential High   | Suckering Potential Low   | Desired Conditions  | SRLA Vegetation Management Direction   | Detailed Prescription  |
|---|--|---|---|--|--|
| <p>Aspen without SAD</p>                            | <ul style="list-style-type: none"> <li>➤ Coppice harvest cut if tree defect is low to high.</li> <li>➤ Can be prescribed burned if harvest cut site access is limited, however these sites are unlikely to support broadcast burns unless there is a moderate fine fuel component.</li> </ul>  | No Treatment  | Stimulate robust sprouting of aspen and create a younger, stand more resilient to SAD. The goal is to mimic natural disturbance patterns resulting from a stand replacing event.  | If mapped as secondary habitat (within 300m of primary spruce-fir habitat) impacts must be addressed in the BA. SRLA does not limit regeneration harvest prescription in aspen.  | Remove all live aspen trees from the stand to trigger sprouting (coppice) to re-establish pure stand of aspen growing in open conditions. Make units large or have multiple smaller units in the same general area to minimize effect of browsing from wild ungulates and domestic livestock. If additional protection from browsing is needed, consider fencing or leaving slash in place that is not near infrastructure. These sites are unlikely to support broadcast burns unless there is a moderate fine fuel component. They are included in the opportunity area but are not considered a prescribed fire burn priority. Burning in these types of stands may include pile burning and broadcast burning, including hand lighting with torch and/or aerial ignition (PSD or terratorch).  |
| <p>Aspen with &lt;50% SAD</p>                       | <ul style="list-style-type: none"> <li>➤ Coppice harvest cut if tree defect is low to high</li> <li>➤ Can be prescribed burned if harvest cut site access is limited, however these sites are unlikely to support broadcast burns unless there is a moderate fine fuel component.</li> </ul>   | No Treatment  | Stimulate robust sprouting of aspen and create a younger, stand more resilient to SAD. The goal is to mimic natural disturbance patterns resulting from a stand replacing event.  | If mapped as secondary habitat (within 300m of primary spruce-fir habitat) impacts must be addressed in the BA. SRLA does not limit regeneration harvest prescription in aspen.  | <p>Remove all live aspen trees from the stand to trigger sprouting (coppice) to re-establish pure stand of aspen growing in open conditions. Make units large or have multiple smaller units in the same general area to minimize effect of browsing from wild ungulates and domestic livestock. If additional protection from browsing is needed, consider fencing or leaving slash in place that is not near infrastructure</p> <p>These sites are unlikely to support broadcast burns unless there is a moderate fine fuel component. They are included in the opportunity area but are not considered a prescribed fire burn priority. Burning in these types of stands may include pile burning and broadcast burning, including hand lighting with torch and/or aerial ignition (PSD or terratorch).</p>   |
| <p>Aspen with &gt;50% SAD</p>                     |  | <ul style="list-style-type: none"> <li>➤ Defer &amp; allow stand to follow natural successional pathway of sparse aspen/shrub field.</li> <li>➤ Or, intensively manage by planting a site-adapted conifer species.</li> </ul> | Not Applicable  | If mapped as secondary habitat (within 300m of primary spruce-fir habitat) impacts must be addressed in the BA. SRLA does not limit regeneration harvest prescription in aspen.  | Not Applicable   |
| <p>Aspen overstory and Spruce-fir understory</p>  | <p><b>Mature aspen stand</b></p> <ul style="list-style-type: none"> <li>➤ Coppice harvest cut if defect low to high</li> <li>➤ Use broadcast burning to stimulate additional aspen when appropriate</li> <li>➤ Remove fir and aspen components to stimulate additional aspen</li> </ul> <p><b>Young healthy aspen stand</b></p> <ul style="list-style-type: none"> <li>➤ Selective removal of fir component</li> </ul> | <ul style="list-style-type: none"> <li>➤ Defer aspen cut and allow stand to succeed to a Spruce-fir dominated stand.</li> </ul>   | <p><b>&lt; 50% SAD</b> - Stimulate robust sprouting of aspen and create an even-aged stand structure. The goal is to mimic natural disturbance patterns resulting from a stand replacing event.</p> <p><b>&gt;50% SAD</b> – Defer treatment allowing spruce-fir and other conifers to establish dominance within the stand.</p> | <p>If mapped as secondary habitat (within 300m of primary spruce-fir habitat) impacts must be addressed in the BA. SRLA does not limit regeneration harvest prescription in aspen.</p> <p>If the spruce-fir component in the stand creates a multi-storied condition then the level of harvest must be tracked under Veg S5.</p> | <p><b>Mature aspen stand w/&lt;50% SAD</b> - Remove all live aspen trees from the stand to trigger sprouting (coppice) and re-establish pure stand of aspen growing in open conditions. Make units large enough in size (30-50 acres) or have multiple smaller units in the same general area to minimize effect of browsing from wild ungulates and domestic livestock. If additional protection from browsing is needed, consider fencing or leaving slash in place that is not near infrastructure.)</p> <p><b>Young healthy aspen stand w/&lt;50% SAD</b> – Selective removal of spruce-fir to set back successional processes in the stand. Goal is to enhance aspen in treated stands. In areas where spruce-fir component is abundant and multi-storied spruce-fir consider letting it succeed to a conifer dominated stand to benefit Canada lynx.</p> <p><b>Prescribed fire</b> – Utilize as needed to encourage aspen regeneration.</p> <p>These types of stands are included in the opportunity</p> |

|  |  |   |  |   | area but will be a low priority for broadcast burning. Broadcast burning these types of stands will be more difficult to accomplish than burning stands with aspen and dry mixed conifer or stands of ponderosa pine with aspen. Fires occurring in stands with spruce-fir can be stand replacing and/or difficult to manage/control.  |
|--|--|---|--|---|--|
| Aspen Structural Stand Conditions  | Light Dead Overstory   | Heavy Dead Overstory  | Desired Condition  | Lynx Response   | Detailed Prescription  |
| <p>Mixed spruce-fir / conifer and aspen overstory and understory</p>  <p><b>Warm-Dry Mixed conifer with Aspen component:</b> Stands consist of mostly ponderosa pine, Douglas-fir, and small pockets of Englemann and blue spruces, subalpine fir, white fir and aspen.</p> <p><b>Cool-Moist Mixed conifer with Aspen component:</b> Stands consist of dominant Douglas-fir with varying amounts of blue spruce, Englemann spruce and subalpine fir components. This type does not have a dominant ponderosa pine component and usually has a dominant mature Englemann spruce component.</p> <p><b>Ponderosa Pine with Aspen component</b></p> <p><b>Lodgepole Pin with Aspen component</b></p> <p><b>Other less prominent vegetation types with aspen component:</b> Other cover types can be associated with aspen including bristlecone pine, cottonwood and limber pine</p> | <p>Coppice treatment to remove tree species in patches within the entire stand.</p> <p>Pile burn as needed to reduce fuels, provide areas for regneration and as directed by design features. Broadcast burn in and around spruce-fir / mixed conifer stands with an aspen component depending on site conditions as as discussed below.</p> <p><b>Warm-Dry Mixed conifer with Aspen component:</b> High priority for broadcast burning</p> <p><b>Cool-Moist Mixed conifer with Aspen component:</b> Low priority for broadcast burning.</p> <p><b>Ponderosa Pine with Aspen component:</b> High priority for broadcast burning.</p> <p><b>Lodgepole Pine with Aspen component:</b> Low priority for broadcast burning .</p> <p><b>Other less prominent vegetation types with aspen component:</b> Low priority for broadcast burning.</p> | <p>Remove spruce-fir / conifer and allow stand to succeed to aspen dominated stand.</p> <p>Pile burn as needed to reduce fuels, provide areas for regneration and as directed by design features. Broadcast burn in and around spruce-fir / mixed conifer stands with an aspen component depending on site conditions as as discussed below.</p> <p><b>Warm-Dry Mixed conifer with Aspen component:</b> High priority for broadcast burning</p> <p><b>Cool-Moist Mixed conifer with Aspen component:</b> Low priority for broadcast burning.</p> <p><b>Ponderosa Pine with Aspen component:</b> High priority for broadcast burning.</p> <p><b>Lodgepole Pine with Aspen component:</b> Low priority for broadcast burning.</p> <p><b>Other less prominent vegetation types with aspen component:</b> Low priority for broadcast burning.</p> | <p>Set stand back to early seral successional state to stimulate regeneration of aspen to create patches of aspen within the larger matrix.</p> <p><b>Warm-Dry Mixed conifer with Aspen component:</b> Reduce the continuity and extent of shade-tolerant species. Create multi-aged stand conditions of aspen. Stimulate regeneration of aspen.</p> <p><b>Cool-Moist Mixed conifer with Aspen component:</b> May need to reduce the continuity and extent of shade-tolerant species. Create multi-aged stand conditions. Stimulate regeneration of aspen as needed.</p> <p><b>Ponderosa Pine with Aspen component:</b> Create open Ponderosa pine stands and stimulate aspen suckering to createmulti-aged stands of aspen.</p> <p><b>Lodgepole Pine with Aspen component:</b> Lodgepole pine may be seral or a virtual climax. If seral, allow succession to other species. If stand is climax, desired condition is maintenance of lodgepole. Stimulate regeneration of aspen component.</p> <p><b>Other less prominent vegetation types with aspen component:</b> Stimulate regeneration of aspen and manage vegetation as appropriate according to Forest Plan.</p> | <p>Depends upon on-the-ground conditions (e.g. multi-storied, live under-story above average snow depth, etc.). Harvest possibly tracked under VEG S1, S2 and / or VEG S6.</p> <p>.</p> | <p>Remove spruce-fir / conifer to release aspen.</p> <p>Prescribed burning in these types of stands may include pile burning and broadcast burning, including hand lighting with torches and/or aerial ignition (PSD or terratorch). Prescribe burn unit treatment area could be larger than the target stand in order to utilize adequate fire cotnrol lines – roads, trails, natural fuel breaks and constructed fire lines.</p> <p><b>Warm-Dry Mixed conifer with Aspen component:</b> Large burn units (several hundred to a thousand acres) will be necessary to plan for a greater probability of high intensity fire expected during burning. High priority for burning.</p> <p><b>Cool-Moist Mixed conifer with Aspen component:</b> Low priority for broadcast burning. These types of stands do not carry fire well resulting in undesireable fire effects.</p> <p><b>Ponderosa Pine with Aspen component:</b> High priority for broadcast burning. Ponderosa pine needles will be most important carrier of fire.</p> <p><b>Lodgepole Pine with Aspen component:</b> Low priority for broadcast burning since burns are typically stand replacing and difficult to control.</p> <p><b>Other less prominent vegetation types with aspen component:</b> Low priority for broadcast burning.</p> |